

Research & Development of System Furniture for Children by Ilgumte

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ABSTRACT

This study aimed at developing furniture for children by Ilgumte which is an expert manufacturer of educational equipments for school and kindergarten and the aim of this investigation is to develop the child-oriented furniture in consideration of Ilgumte's characteristic as a company composed of the disabled people, and furthermore to create a new sales market by developing own technology to improve competitive power. The current status of the child furniture in domestic and international market was researched and design concept on basis of this analysis was set, and through the designing process the new items of furniture having characteristics as follows were developed.

First, the simple production way for the disabled to be able to work was selected and plywood used mainly by Ilgumte was presented as main material.

Second, moving course, space and storage function were maximum considered, so that children feel convenient at using the furniture in their space, in case of playing as well as leaning.

Third, natural wooden texture was mostly reflected for the emotional aspects of children and pink color played a role as partial accents.

Finally, difficult production skill and expensive material were excluded for cost down.

Key words: Ilgumte, child furniture, system.

1. INTRODUCTION

1-1 Purpose

The perspectives to view the domestic market for child furniture are contrary to each other. There is a part of the optimistic view to present that the falling birth rate is making many families with only child and the demand for child furniture at mid and high price will increase accordingly under the particular condition of education-obsessed Korean parents. But there is also the other part to believe on the contrary that the low birth rate causes rather the decrease of consumer and the demand finally falls off. The domestic market being showed fully differently despite of the same reason of the falling birth rate is currently in a difficult phase due to the economical downturn. How difficult is like that the quitting & opening of the manufacturing companies are so often that the consumer can not get any after sales service frequently, so there is no opportunity to accumulate technology and skill and it is no wonder that Korea has not a single brand to represent child furniture sector. Under such a poor surrounding there is a company of which staffs are composed of

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the disabled and which manufactures educational equipments on the basis of the orders from special schools.

This study presents the development of furniture by company “Ilgumte” being specialized on manufacturing of educational equipments for school & kindergarten, and the child furniture should be herein developed in consideration of the characteristics as a company composed of the disabled and also the new demand founded by creating own technology and enhancing competition power accordingly.

1-2 Scope and Method

Scope of the study includes to understand the current status of Ilgumte and to collect the data for child furniture of national and international cases. Under child furniture it can be understood the dresser having the biggest demand in the market, bed, bookcase and case furniture, and the targeted age is limited to 15 from 7.

Method is as follows : first specialized magazine and publication regarding child furniture are collected. By the help of the internet different information is expected and design concept will be created on the basis of this data collection, and then idea sketch , drawing and rendering are made till the prototype is finally produced.


2. Current Status of Child Furniture in domestic & international cases







2-1 Domestic Status

Child furniture in Korea has been built in diverse colors and showy pattern to stimulate and satisfy child’s curiosity, and in the view of shape different designs are presented unlike in furniture for adult. Also the environment-friendly material and painting are obligatorily used, and fully different characteristics unlike adult furniture are seen, and the customized functional goods are for the most part. In other side however each manufacture has somewhat similar idea and just a little different in material and pattern because the popular mode for child furniture is so changeable, and it causes little product differentiation. The color is dominantly white and as accent colors green, blue and pink circles are in most. According to the reported in society 1986, the most used colors at that time were brown and ocher, and it was caused by wood color (Lee et al., 1986). The investigation by Korean Institute of Design Science 2003 showed that blue color was beloved by the children at age from 7 ~15 (Hur & Yoon, 2003). Such tendency is believed to be unchangeable up to now in 6 years later, but the most seen color in market is white as mentioned. Therefore it can be said that the color for child furniture does not depend on the taste of children, but on price from the view of manufacturer, material and the preference for color of parents who actually have buying power.

Table 1. Analysis of current status in Korea

Unit : 1,000 KRW

	Brand	Image	Characteristic	Price
1	SASA & Tom and Jerry Cinderella a Series		MDF/Romantic design & pastel pink inspiring curiosity &Imagination/ finished byurethane/nontoxic/non changeable painting / curve line	total:3,006

2	Kidsdorm Eric series		Real wood/harmony of 2 toned colors /Large cases /height adjustable/ delicate carve like moon /Human engineering-oriented design	bed:800 desk:680 dresser:800 chair:130 Total;2,410
3	Emons Lavender Series		Soft curve/semi-classic/elegant bed & closes chest/curved upper part of desk for soft image/environment-friendly for convenience	Total:1,980
4	Finehouse Furniture		spruce / firm & natural beauty / healthy environment / big handles for convenience / beauty factor	Total:2,932
5	Finlandia Mesa series		Washed wood /Provence style / Natural&comfortable/ Different colors mixed, matched/Luxury handle / Feminine curve line	Total:2,604
6	Woodpia Litz Series		Detailed design shown in handle, bed side & upper part of clothes chest/white washed/clean image	Total:2,513
7	Paroma Engel White Jr		Romantic by Ash grain & silver pearl /Different shapes & decoration / focused on emotion of child	Total:2,321

8	Scandia		Ivory white color /innocent & warm /different ideas available according to the room size / environment-friendly	Total:2,015
9	Bonvivi		Plywood : specially processed wood / Birch / quality wood hard /clean / high-density	Total:1,353
10	Iloom Oly Series		Free layout based on mix/multiple learning space available/panel/ low desk & book case turned around 360/	Total:2,326

***Price is based on internet data and difference is available according to each distribution channel.







Results showed from the a.m. information collect are ;

- 1) the characteristic, material and processing method are all similar for each company and there in no product differentiation accordingly.
- 2) the function for storage space is dominant and other different aspects are little.
- 3) the research and development of the items to satisfy the curiosity of children are highly demanded.
- 4) the most brands are expensive and the designing at reasonable price is necessary.

2-2 International Status

Diverse designs to utilize the space are often presented and for functional as well as style aspect there were many companies showing different characteristics. Furthermore storage space, an absolutely necessary point for child furniture was sufficient and the environment-friendly material was used. There were many unique items at the level of children's thinking being independent any popular color and pattern. Therefore, the items for practical and long-term use rather than popular mode are here the theme.

Table 2. Analysis of current status in international cases

	Brand	Image	Characteristic	Web -Site
1	Franceshunt		Bunker styled bed & desk at small space/ Below part of bed as storage/in & out of chair with castors	www.franceshunt.co.uk
2	Gautier		Strong & safe appearance / design factor to interest children is missed.	www.gautier.fr
3	Vipkids		Natural touch by wood grain / one combination among bed, desk and storage for utmost utilization of space	www.vipkids.co.uk
4	Marlip		Combination between sofa and bed / ideal for small space / clean / white-toned color	www.marlip.com
5	Moretti connact		Good harmony of similar color circles / Combination between dresser & bookcase/ Bed & desk under bookcase / efficient space utilization	www.moretticonnact.com
6	Paidi		Soft & harmonized beige plus straight pink line as accent/ Light brown for frame part for stable & strong appearance	www.paidi.de

The above mentioned data informed us of ;

- 1) each company presents different designs.
- 2) effective utilization of space and good organized storage
- 3) children-oriented design to meet their curiosity
- 4) functional , systemized furniture helps long-terms use and it's economical
- 5) mostly environment-friendly

2-3 Dimension of Child Furniture

Dimension of child furniture was limited to 5 selected items in this study.

Table 3. Scales of child furniture

	Height	Dimension	Characteristic
Dresser	Height (from the age 7 ~ 15) (on the average 110 - 175 cm)	height : 1800~2100 width : 900~1200 length : 600~800	Storage function / safety
Bed	(from the age 7~ 15) (on the average 110 - 175 cm)	height : 800~900 width : 1100~1200 length : 1900~2200	Inertia (in case of including drawer)
Book case	(from the age 7~ 15) (on the average 110 - 175 cm)	height : 1800~2100 width : 900~1200 length : 300~450	Inertia (in case of including drawer)
Desk	(from the age 7 ~ 15) (on the average 110 – 175 cm)	height : 700~750 width : 1500~1800 length : 550~700	Non-toxic / safety
Drawer	No age limit	height : 650~750 width : 400~500 length : 500~600	Non-toxic / safety

3. Development of System Furniture for Children

3-1 Concept

Ilgumte is a job-offering company for the mentally handicapped who could not be employed in usual, and it is composed of the disabled and the normal people in the proportion of 1:2. So the design and concept are surely downgraded compared with the existing manufacturers, and there is no company-informing brand, despite of many items.

The design concept was therefore created in consideration of the a.m. specific situation of the company like simple and usual styles at reasonable price, so that the consumer could approach the items without any hesitation. The items developed were decided as bed, desk, bookcase and dresser to be able to form a set within a bedroom of child. For the targeted age was limited from 7 to 15, therefore the systemized furniture was created for them to use further with regardless of their quick growth. The 10 years long-term use war intended and for that the material with natural wood grain and colored painting as an accent were treated for interesting the user constantly.

3-2 Idea Sketch

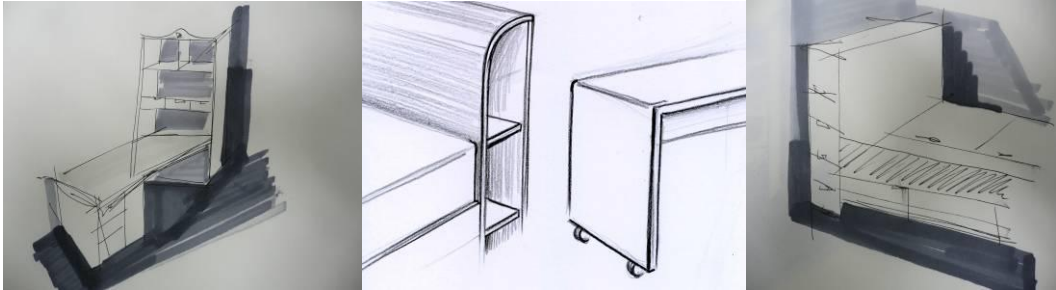


Fig.1. Sketch.

Sketch was focused on system furniture available to be changed according to the related functions, and so box shapes are often presented and the curved line was finished in part for an accent. In particular on the upper part and the under of bed were differently designed for storage function.

3-3 Drawing

Bed, desk and bookcase were roughly presented in CAD drawing.

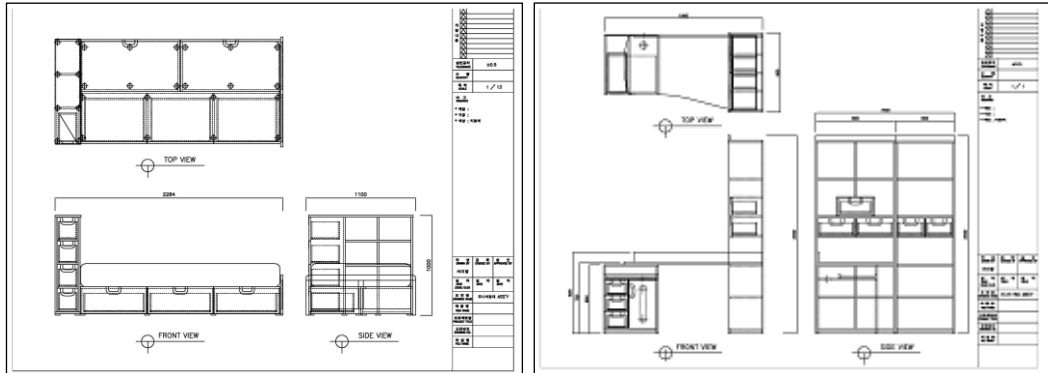


Fig.2. Drawing (bed, desk and bookcase).

3-4 Rendering

In consideration of Ilgumte’s characteristic to use mostly the plywood made of gum tree, the rendering thanks to the computer was realistic presented. 2 ideas of simple head panel and panel with storage space were proposed. Under the mattress also storage space was placed, and around the part of handle the logo of “Ilgumte” was printed.



Fig. 3. Bed.



Fig. 4. Desk and Bookcase.



Fig. 5. Dresser.

3-5 Prototype



Fig. 6. Prototype set.

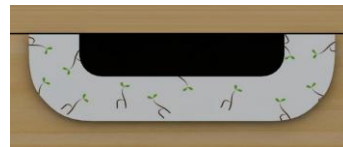


Fig.7 Logo & Drawer handle.

Plywood made of the gum tree was used here and wood grains were naturally presented, and in front side of drawer the coating with red was partly stressed. On the top part of bookstand and dresser the curved line was added in general, which avoided the formal atmosphere of the straight line, overall. The company logo was applied also to a pattern and thanks to this the manufacturer could be introduced not only from the logo, also from the products themselves naturally. The logo of “Ilgumte” symbolizing the sprout from the love as a seed could be emotionally matched up with

child furniture.

4. Conclusions

The development of the new child furniture was created according to the following design concepts, in consideration of the specific characteristics of “Ilgumte” as a company consisted of the disabled.

First, the simple production method for the disabled to be able to work without any difficulty was selected and the plywood used mostly by “Ilgumte” was presented as main material. Second, moving course, space and storage function were maximum considered, so that children feel convenient at using the furniture in their space for playing as well as for learning. Third, natural wooden texture was reflected as much as possible for the emotional aspects of children and pink was stressed as partial accents. Finally, difficult production skill was excluded for the cost down.

As there are representing brands for household and office furniture as well, it is highly desired to make a faithful brand for child furniture, too. Steady and constant research and development rather than focusing on the popular mode are necessary for creating reliable furniture manufacturers to lead child culture in the future. We hope that this study could play a role as a catalyst to inspire and encourage the research & development in child furniture industry.

5. References

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